BCLDP CEMP

The Battelle Columbus Laboratories Decommissioning Project | Columbus Environmental Management Project

HEPA Exhaust Diffuser

Savings = $499,000 per year

Problem/Need

Portable high efficiency particulate airborne (HEPA) ventilation units are used to control staff exposure to airborne radioactive material at a Battelle site near West Jefferson, Ohio. High-velocity exhaust flow from these portable ventilation units can cause resuspension of loose contamination from the uncleaned surfaces (such as walls and overhead beams) in contaminated work areas. This increases the potential exposure to workers, requiring additional radiological monitoring.

Technology Description

The Battelle Columbus Laboratories Decommissioning Project has reduced the effects of the HEPA exhaust from these portable ventilation units by increasing the duct exhaust size and diffusing the air using loose-fitting prefilters This modification not only reduces the exhaust velocity, but diffuses it into the room harmlessly without creating significant back pressure that could affect the unit's effectiveness.

Benefits

The diffuser minimizes the resuspension of radioactive particles caused by the HEPA's exhaust and reduces the amount of airborne contaminants to which workers are exposed. At a cost of approximately $1,000, the diffuser modification will reduce the level of potential exposure to workers and associated monitoring, saving almost $500,000 per year.

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